

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application:

Claims 1-57 (Cancelled)

58. (New) A material for controlling a flow of water to maintain a desired temperature of an object, the material comprising:

an outer layer;

an inner layer; and

gel particles disposed in the inner layer that expand when fluid in contact with the gel particles is below a phase transition temperature of the gel particles to limit flow of the fluid through the inner layer to regulate the temperature of an object in contact with the inner layer.

59. (New) The material of claim 58, wherein limiting flow of the fluid through the inner layer limits pumping of the fluid through the inner layer which limits heat loss from the object.

60. (New) The material of claim 58, wherein the surface temperature of the object is regulated by limiting flow of the fluid through the inner layer.

61. (New) The material of claim 58, wherein the gel particles contract when fluid in contact with the gel particles is above the phase transition temperature of the gel particles and the expansion of the gel particles allows for flow of the fluid through the inner layer to increase.

62. (New) The material of claim 61, wherein flow of fluid through the inner layer increases heat loss from the object.

63. (New) The material of claim 58, wherein the object is the skin of a human body.

64. (New) The material of claim 58, wherein the fluid flows through the outer layer to contact the gel particles.

65. (New) The material of claim 58, wherein the inner layer comprises a foam material.

66. (New) The material of claim 58, wherein the outer layer comprises neoprene.
67. (New) The material of claim 58, further comprising a second outer layer outside of the outer layer.
68. (New) The material of claim 58, wherein the gel particles are hydrogel particles having a VPTCT in the range of about 18°C to about 25°C.
69. (New) The material of claim 58, wherein the inner layer comprises gel particles in an amount approximately 5% to 80% by weight of total dry weight of the matrix.
70. (New) The material of claim 58, wherein the gel particles comprise poly(N-isopropylacrylamide).
71. (New) The material of claim 70, wherein the gel particles comprise a hydrophobic monomer.
72. (New) The material of claim 71, wherein the hydrophobic monomer is N-tert-butylacrylamide.
73. (New) The material of claim 58, wherein heat loss through the material decreases when the temperature of the fluid in contact with the gel particles is below the phase transition temperature of the gel particles.
74. (New) The material of claim 58, wherein heat loss through the material increases when the temperature of the fluid in contact with the gel particles is above the phase transition temperature of the gel particles.
75. (New) The material of claim 58, wherein the material is incorporated in a wetsuit.